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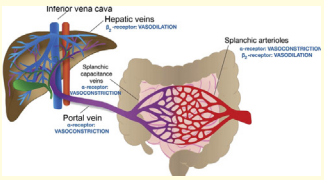
Inside This Issue

STATE-OF-THE-ART PAPER



CLINICAL RESEARCH

(continued on page A-26)

ANTIPLATELET THERAPY

Gurbel and colleagues investigated the effects of smoking on the pharmacokinetics (PK) and pharmacodynamics (PD) of clopidogrel and prasugrel therapy. Patients were randomized to clopidogrel (75 mg daily) or prasugrel (10 mg daily) for 10 days and crossed over after a 14-day washout. During clopidogrel therapy, inhibition of platelet aggregation (IPA) was lower and $P2Y_{12}$ reaction units (PRU) and vasodilator-stimulated phosphoprotein phosphorylation-platelet reactivity index were higher in nonsmokers than smokers. Greater antiplatelet effects were seen with prasugrel treatment compared to clopidogrel irrespective of smoking status. These results demonstrate lower clopidogrel active metabolite exposure and PD effects of clopidogrel in nonsmokers relative to smokers.

Editorial Comment: Laurent Bonello, Corinne Frère, Franck Paganelli, Marc Laine, p. 513

HEART FAILURE

Hemoconcentration, defined as increases in measured hemoglobin and hematocrit, during the treatment of decompensated heart failure (HF) indicate a reduction in intravascular volume. Testani and colleagues reviewed the outcomes of patients hospitalized with HF. Hemoconcentration occurred in one-half of patients. Early hemoconcentration was defined as prior to the midway point of the hospitalization, regardless of its duration. Patients with late hemoconcentration had higher average daily loop diuretic doses, greater weight loss, and shorter length of stay compared to early hemoconcentration, and higher survival rates compared to those with no hemoconcentration. These results suggest a benefit to progressively reducing plasma volume prior to discharge.

(continued on page A-27)

HEART RHYTHM DISORDERS

Marfella and colleagues performed quarterly 48-h Holter monitors to determine if subclinical episodes of atrial fibrillation (AF) were associated with an increased risk of silent cerebral infarct (SCI) and stroke in diabetic patients. The diabetic subjects were significantly more likely to have at least 1 subclinical episode of AF lasting at least 10 min than a control group of nondiabetics (9.0% vs. 1.6%). Diabetic patients with silent episodes of AF had higher baseline prevalence of SCI (61% vs. 29%) and higher stroke events (17.3% vs. 5.9%) during the follow-up period. Subclinical episodes of AF occur frequently in type 2 diabetic patients and significantly increase the risk of neurologic events.

HEART RHYTHM DISORDERS

Medi and colleagues performed a detailed battery of neurocognitive testing before and after atrial fibrillation (AF) ablation procedures and included a control group of AF patients that did not undergo ablation and another control group of patients with supraventricular tachycardia (SVT) that underwent ablation. Patients were administered 8 neuropsychological tests at baseline and at 2 days and 3 months post-operatively. The incidence of post-operative cognitive dysfunction (POCD) at day 2 post-procedure was 28% in patients with AF, 13% in patients with SVT, and 0% in AF control patients. At day 90, the incidence of POCD in patients who underwent AF ablation was 13% to 20%, while it was 3% in patients with SVT, and 0% in AF control patients. Higher left atrial access time was associated with POCD on univariate analysis.

Editorial Comment: Eric N. Prystowsky, Benzy J. Padanilam, p. 540

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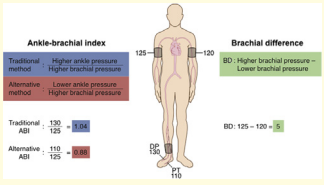
CARDIAC IMAGING

Poon and colleagues conducted a retrospective multivariate analysis of emergency department (ED) patients presenting with chest pain to assess the impact of coronary computed tomographic angiography (CCTA) versus standard evaluation on admissions rate, length of stay, major adverse cardiovascular event rates, recidivism rates, and downstream resource utilization. The admission rate was lower for CCTA (14% vs. 40%). There were no difference in the rates of deaths and acute myocardial infarction. Standard evaluation patients were 7 times more likely to undergo invasive coronary angiography without revascularization with similar rates of revascularization. Routine use of CCTA in the ED evaluation of chest pain may safely reduce healthcare resource utilization.

PERIPHERAL ARTERY DISEASE



Traditionally, the ankle-brachial index (ABI) is calculated using the higher of the dorsalis pedis (DP) and posterior tibial (PT) arteries divided by the higher brachial pressure. Nead and colleagues studied an alternative ABI using the lower of the DP or PT blood pressures. The ABI was calculated in a cohort of patients undergoing coronary angiography. Sixteen percent had a traditionally calculated ABI of <0.90. A total of 22% of the remaining subjects had an ABI of <0.90 using the alternative ABI method. Adjusted Cox regression models showed that the alternative-PAD group had an increased risk for all-cause and cardiovascular mortality compared to the patients with normal ABIs by both methodologies. These results suggest that the alternative ABI identifies patients at increased CV risk that are classified as normal with the traditional ABI calculation.

Editorial Comment: William R. Hiatt, p. 560